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E7.8-10033
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II

Quarterly Progress Report

Period: July 1 to September 30, 1975

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I. Title of Investigation: Crop Identification and Acreage
Estimation over Large Geographic
Areas using LANDSAT MSS Data

Contract No. NAS5-20793

LANDSAT Investigation No. 21330

II. Problems:

To date, no CCT's have been received from EDC for analysis.
An order for 12 frames was sent August 20. Confirmation of the
order has been received and the order is being processed at this
time.

III. Accomplishments:

Aircraft Photography: Five flightlines of aerial photography
were collected over the state of Indiana during the second
week of July and were again flown in late August. These flight-
lines are currently being photointerpreted to provide training
and test areas for the data analysis and evaluation. Fifteen
locations in the state of Indiana each covering 10 square miles
(2 x 5) were ground checked during early July to serve as
training information for the photointerpreters.

Investigation of Alternative Clustering Methods: Currently
there are three different cluster algorithms available for
data analysis within the LARS system. Two of the algorithms
are experimental versions not found on the regular LARSYS
version 3.1 package. An analysis comparing the results of
the different algorithms using the same data set is being
conducted at this time. Objectives of the comparisons are:
1) to determine which method is most economical in terms of
computer time, 2) to determine if similar spectral classes
will be defined and 3) if different classes are defined, which
set most accurately defines the classes of interest. The
results of this study will be input into the final analysis
procedure.

Development of Statistical Model: A study is currently being
conducted to determine the number and size of samples to use
for estimating crop acreages.

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(E76-10033) CROP IDENTIFICATION AND ACREAGE
ESTIMATION OVER LARGE GEOGRAPHIC AREAS USING
LANDSAT MSS DATA Quarterly Progress Report,
1 Jul. - 30 Sep. 1975 (Purdue Univ.) 2 p HC
\$3.50

Plans for Next Reporting Period: With the expected arrival of data from EDC, classification and evaluation of Kansas LANDSAT data for estimation of wheat acreage should begin. Selection of a data set for use in Indiana should also be made, providing availability of imagery for selecting LANDSAT data.

IV. Significant Results: None

V. Publications: None

VI. Recommendations: The time lapse between LANDSAT data collection and distribution needs to be reduced. In order for field checking of classification results, data must be received prior to harvesting of the crop. Reduction of current time lapse of 60-90 days from collection to distribution to 30 days would be very desirable.

VII. Funds Expended: August 31, 1975 - \$22,124.00

VIII. Data Use:

	<u>Value of Data Allowed</u>	<u>Value of Data Ordered</u>	<u>Value of Data Received</u>
CCT	\$24,800	\$2,400	\$0
Imagery	\$1,000	\$0	\$248

IX. Aircraft (NASA) Data: None